ANNAMBHATTA'S

TARKA-SANGRAHA'S

English Translation and Notes.

OPENING PRAYER.

HAVING enshrined the Lord of the Creation in my heart and having made a salutation to the Master, I write this primer of logic to facilitate the study of children.

For the successful completion of the work begun, the author begins with a prayer, as good usage and the Holy Text would have it, to his favourite deity.

" But then," says an opponent, " a prayer is not required of necessity for the completion of a work. It is no means to an end. Kirnavali, though it begins with a prayer, did not reach its end, while Kadambari, even without it, was complete. So the rule does not hold good universally." "No," says the author, "in the case of Kirnavali, the proportion of obstacles was too great for the amount of prayer actually offered, and therefore it was unfinished; as for Kadambari the author had offered the required prayer, though not in the body of the work, either in his previous birth orsilentiy in his mind, and so the rule is valid."

" Well, but what authority is there for offering a prayer?" respectable usage and inference from the Sruti, is the response.

" One desirous of a successful completion should offer a prayer," thus runs the Text. A prayer moreover is an act enjoined by the Vedas, like darsha and others, as it has ever been the object of uncommon and unprohibited practice of wise men. Uncommon because it is unlike the ordinary human acts of eating and drinking ; unprohibited because it is not expressly forbidden like the performance of a Sraddha ceremony at night. When there are so many treatises on logic, Annambhatta's apology for adding one more to their number is that, they are very exhaustive and so beginners find it very difficult to understand them. Tarka-Samgraha contains the latest ideas in the simplest words. It is a compendium or a short exposition of all knowable things.

II. There are seven categories : Substance, Quality, Action, Generality, Particularity, Intimate Relation, and Negation.

A **Padartha** is a thing having a name. Then follows a curious disquisition as to whether an eighth category can be logically proved not to exist. It is either known or unknown. If it is known then it does exist and the restriction to seven is wrong. If it is unknown, then it cannot be negatived, as there can be no negation of an unknown thing. The dilemma is cleared by narrowing the sphere of the definition, the genus padartha is covered by any one of the seven species!

III. Of these seven categories, the class Substance comprises nine and nine only : Earth, Water, Light, Air, Ether, Time, Space, Soul and Mind.

Why not admit Darkness, as the tenth substance ? It is popularly known as the blue moving Darkness. That it is

a substance is clearly proved by its being the substratum of blue colour and the vehicle of motion. Again as it has colour, it does not fall under the last five heads (they having no colour). It is not Air as it has no touch nor constant motion ; it is not Light, as it has no bright colour nor hot touch ; nor is it Water because it has no cold touch nor pale white colour; and last but not least, it is not Earth, as it has no odour nor touch. Darkness therefore is a tenth substance altogether different from the preceding nine.

To which Annam-bhatta replies that darkness is but the negation of light. It is not a substance having any colour, because every such substance requires light for being perceived with eyes, while this is perceived only when there is no light. Darkness therefore is absence of large and illuminating light; that it is blue and moving is a mere delusion.

A substance is defined as 'having substantiality,' or 'the substratum of a quality,' where a quality resides.

What is a definition? non-pervasion of the characterestic on a portion of the definitum is **Avyapati ;** e. g. a cow is a tawny-coloured animal. Extension of the charactirestic to things not denoted by the definitum is **Ativyapati ;** e. g. A cow is an horned animal. Total absence of the characteristic on the definition itself is **Asambhava,** or absurdity ; e. g. A cow is an animal having uncloven hoofs.

A definition is an attribute free from these three faults ; e.g., a cow is an animal having a dewlap. This is called its peculiar attribute.

A peculiar attribute is that which exactly covers all (neither more or less) things denoted by the definitum.

The definition of a substance as 'anything where a quality resides,' is inapplicable, says someone, to substances in the first moment of their creation when, according to the Naiyayika theory, they are without any attributes. If the qualities

are supposed to rise simultaneously with the substances and not a moment later on, all distinction between qualities and substances will be abolished.

Annambhatta says that substances, though without any attributes in the first moment of their creation, even then have a genus, other than existence.

IV. There are twenty-four qualities: Colour, Taste, Odour, Touch, Number, Dimension, Severality, Conjunction, Disjunction, Priority; Posteriority, Gravity, Fluidity, Viscidity, Sound, Intellect or Understanding, Pleasure, Pain, Desire, Aversion, Effort or Volition, Merit, Demerit and Faculty.

A quality is defined as "that which possesses Generality, being at the same time different from Substances or Actions;" or "that which possesses the genus quality."

According to the Naiyayikas, Generality resides in Substance, Quality and Action; the definition "that which possesses Generality " would be applicable to all these three and so to suit the present purpose it is expressly narrowed down by excluding Substance and Action.

The second is only a verbal definition.

Lightness or smallness, softness and hardness; says the author, need not be considered as separate qualities, as they are either negations or con tradictories of some one of the twenty-four qualities. Thus smallness or lightness is nothing but the negation of greatness or heaviness; while softness and hardness are simply different degrees of conjunction.

V. There five kinds of actions: throwing upwards, throwing downwards, contraction, expansion, and going.

Action or motion is "the non-intimate cause of conjunction, but is itself different from conjunction"; or is "that which possesses the genus action."

All miscellaneous motions, such as gyration, evacuation, trickling, flaming up, and slanting are to be classed under simple 'going.'

VI. Generality is of two sorts: higher and lower.

Higher or extensive generality, e. g., existence ; Lower or non-extensive generality, e. g., substantiality. There is no genus in generality, particularity, intimate relation and negation.

VII. Particularities reside in eternal substances and are innumerable

The final atoms of earth, water, light and air ; as also ether, time, space, soul and mind are the eternal substances.

VIII. Intimate relation is one and one only.

It has no divisions.

IX. Negation is of four kinds : Antecedent negation, Consequent negation, Absolute negation and Reciprocal negation.

The first exists before a thing is produced, the second results after a thing is destroyed, the third exist always and in all places except where the thing itself is, and the fourth is the denial of one thing being another.

X. Earth is that which has odour. It is of two sorts : eternal and non-eternal, the first being atomic and the second a product.

It is again divided into three sorts, body, organ of sense and gross matter. The body is that which belongs to human beings like ourselves; the organ is that of smell which apprehends odour, and is

situated at the root of the nose ; while gross matter comprehends all other earthy things, such as earth stones, etc.

The definition will not be applicable to a product composed of parts having both good and bad smells, is rendered odour less owing to the two kinds of smells mutually destroying each other; nor can you say that the perception of odour there is rendered impossible. It will not also apply to a product in the first moment of its creation, as it is then without any attribute. We apprehend odours moreover in water also. How is this?

In the first case, says Annambhatta, we can distinctly apprehend the different odours of component parts, and so there is no need of recognizing any more variegated odour. The second objection is the same we had before against the quality of a Substance, and may be refuted in the same way. The presence of odours in water is due to the presence of earthy particles in it.

The definition, says the Opponent again, overlaps on time and space as each is the general substratum of all things ; to which the author says that though it is so, earth is the peculiar substratum of smell only, being intimately connected with it. That which is not liable to destruction is eternal; that which is liable to destruction is non-eternal.

A body is the instrument of realizing pleasure or pain. An organ of sense is the seat of that mental union which produces knowledge, but is not the seat of any special qualities except sound. Gross matter is that which is neither body nor organ of sense.

XI. Water is that which has a cool touch. It is of two sorts: eternal and non-eternal, the first being atomic and the second a product.

It is again divided into three sorts ; body, organ of sense and gross matter.

The watery body is (possessed by beings) in the Varuna loka; the organ of sense is the organ of taste located at the tip of the tongue; and the gross matter comprehends rivers, oceans, etc.

A slab of stone is cold because of the presence of water particles in it The watery body like that of an Apsarasa for instance, is no impossibility. It does not burst like a bubble, for though mainly composed of watery materials, there is enough of other particles in it, to hold it together and add consistency to it. It is of a spotless white colour and extremely flexible ; unlike our body, it is non-embryonic and very fascinating. It is born of will and goes anywhere by mere will.

XII. Light is that which has a hot touch. It is of two sorts; eternal and non-eternal; the first being atomic and the second a product.

It is again divided into three sorts: body, organ of sense and gross matter. The luminous body is (possessed by beings) in the Adityaloka ; the organ of sense is the organ of sight located at the top of the black ball*; and gross matter is fourfold.

(a) earthly, in the shape of the common fire and the light of the glow-worm;

(b) celestial, in the shape of lightning, sunlight, moonlight and the submarine fire;

(c) gastric, which is instrumental in digesting eaten food; and

(d) mineral, such as gold and other metals.

Water is hot because of the presence of light atoms in it. The four-fold gross matter is a mere child's play; the earthly

* Modern science places it still further back on the retina, the black eyeballs being simply windows to let in external light.

and the celestial are properly speaking one and the same. Whence if not from our sun, did the first fire on earth come ; It requires a little poetic stretch to admit the third fire and none but an Indian would believe in it; while the fourth is a conventional technicality.

Gold is light because it cannot be anything else. It is not earth because the fluidity of melted gold is not destroyed even by the application of extreme heat, while the fluidity of earthy things, such as clarified butter, is found to vanish at such an application, provided there is no counteracting force as when it is placed in water. There can be no such force here in the case of gold and yet its fluidity remains intact. It is not therefore earth sheerly because it is yellow and heavy like tumeric. It is not water, as its fluidity is occasional and not inherent. It is not wind as it has colour. Its being any of the last five substances is of course out of question. It is therefore light. Its natural brilliancy and heat are concealed by the obstruction of earthy colour and touch.

XIII. Air is that which is colourless and possessing touch. It is of two sorts: eternal and non-eternal; the first being atomic and the second a product.

It is again divided into three sorts: body, organ of sense and gross matter. The airy body is (possessed by beings) in the Vayuloka, the organ of sense is the organ of touch in the shape of an airy cuticle extending over the whole surface of our bodies and gross matter in the form of wind that blows and shakes trees.

Breath is wind moving in the interior of our bodies; though one it has different names according to the different parts of the body it travels over and the different functions it performs.

Of the definition the first epithet is meant to, exclude the first three and the second the last five substances.

There is only one breath passing over five places and performing five different functions. Prana is situated in the breast, Apana in the rectum, Samana in the navel, Udana in the throat and Vyana over the whole body.

The not-hot-not-cold touch which we feel on the blowing of the wind must reside in some substance as it is a quality. Now the touch cannot reside in earth, because all earthy matter having manifested touch has also manifested colour which is not found here. It cannot reside in water or light because it is neither hot nor cold. It cannot reside in the four all-pervading substances because it is not found everywhere ; and lastly, it cannot reside in mind, because mind being atomic, any quality residing in it cannot be felt. So it must be residing in air the remaining substance.

Air being the borderland between the visible and the invisible world, a hot discussion has been carried on between the ancient and modern schools of Naiyayikas as to whether it is perceptible or not. The ancient school, to which Annambhatta belonged, held that it cannot be perceived but can only be known by inference. The argument, that it is perceptible like a jar as it possesses perceptible touch, is, he says wrong, because manifested colour is a necessary condition precedent to perceptibility. All substances visible to external senses have a manifested colour. We cannot therefore assert that wherever there is tangibility there is manifested colour. Such an argument would be a fallacy, the major premise becoming too extensive.

Roughly speaking, Earth, Water and Air, according to the Hindoo physicist, denote the three states of matter, solid, fluid and gaseous, while Light is a sort of material embodiment of the energy of heat, light, magnetism and electricity. Light, or more accurately luminosity, is classed as a variety of colour, and heat is a kind of touch. And ether is a sort of liquid film.

How the world is created?

God willed and motion was first produced in the atoms. This motion produced conjunction of two monads giving birth to a diad. Three diads are required to make one tertiary. From this last is produced the quadrate and so on until the great masses of earth, water, light and atmosphere are formed.

The destruction of things takes place exactly in the same way. God wills to destroy and motion is produced which destroys the bianary after separating the monads. Thence follows the destruction of the tertiary and so on, until the whole world is dissolved.

The existence of these atoms is proved thus:

i. Every visible thing is composed of parts, for a thing in order to be visible must have three dimensions, length, breadth and thickness; and these dimensions necessarily presuppose smaller parts.

ii. Every object having parts, is divisible into any number of smaller parts.

From these two axioms we come to the conclusion that by gradually dividing and subdividing a thing howsoever large we can arrive at particles as minute as we please. Refined means may increase this power of division to a very great extent, but still there must be a certain limit beyond which we cannot divide a particle. Science therefore is forced to assume a limit, and this is the Paramanu of the Naiyayikas and the atom of European scientists—the smallest of the small and the ultimate constituent of all matter in the universe. This is the genesis of the Indian atomic theory, materially agreeing with that of Dalton in modern times on which the whole science of chemistry may be said to be founded.

The airy body unlike the watery and luminous bodies, has no special form nor colour. It can assume almost any form of man or beast, beautiful or hideous. It appears at

first sight, more like a column of thick whitish smoke or a heap of cotton, sufficiently gigantic to frighten you to death; it is more powerful than either of the preceding ones and more easily duped and made subservient to your will by fond prayers and fragrance.

It has intellect but no mentality, and is little better than a beast. Ghosts of man or beast, the refuse of this society, being very mischievous, have enriched the folklore of superstition in almost every country in the world.

Annambhatta, it appears, was going to say something more about 'breath.' But as it is, the definition is anything but satisfactory. It is only a partial description. Breath is not merely wind moving in the body and performing bodily functions, but certainly something more.

The theory of creation and destruction of the world, is again anything but satisfactory. The work of destruction is extremely awkward if not ridiculous. Creation and destruction are effected in the same way. This means that if you want to pull down a house you must begin, mind not from the roof as common sense would have it, but from the foundation.

XIV. Ether is that which has sound for its quality. It is one, all-pervading and eternal.

Ether is one as there is no proof of its multiplicity. Being one and emittting sound everywhere, it is necessarily all-pervading and being all-pervading it must be eternal. All-pervasion is contact with all corporeal objects. Corporeality is the quality of having definite dimensions or the capacity of action.

The distinction between **Bhoota** and **Moorta** is simple. **Moorta** dravyas are corporeal substances that are limited in space and have definite dimensions; while **Bhoota** dravyas are not necessarily so. They are simply elemental substances which singly or by combination among themselves become the material causes of all the products in the world. Mind

though atomic does not produce anything else and is not therefore **Bhoota.** While Akasha though all-pervading produces sound. The other four Substances are of course both **Bhoota** and **Moorta.** **Bhootawa** is opposed to invariability, **Moortawa** to all-pervasion.

XV. Time is the (special and instrumental) cause of the employment of words such as past, present, etc.

It is one, all-pervading and eternal.

This is merely a vague and verbal definition of time. The question what time is essentially, remains to be answered; it has remained unanswered till now in spite of the various speculations of philosophers of all ages and all countries, and it will probably remain so till the world's end. The fact is that it is beyond human conception; we can have at the most a very dim idea of it; indeed some of the sages have gone the length of identifying time with God, when they found the attempt to define it hopelessly baffled.

The most that can be said of it is, to use the author's words, that it is the substratum of all, and the instrumental cause of all products.

XVI. Space is the (special and instrumental) cause of the employment of words, such as east, west, etc.

It is one, all-pervading and eternal.

The Sarvadarshana Sangraha gives a more technical definition. 'Space is that which not being Time is extensive and devoid of any special quality.' The difference between time and space is slight but clear. The divisions of time are determined by production and destruction of things, while those of space by the greater or smaller number of visible objects that intervene between two spots.

XVII. Soul is the substratum of knowledge. It is of two sorts: Supreme and Individual, of whom the Supreme Soul, viz., God is One and Omniscient; while the individual soul is all-pervading, eternal and different in each body.

But an atheist would deny the existence of God altogether as there is no direct proof of it. He would say for instance : God cannot be perceived because, being a colourless substance, He is not the object of external senses ; nor can he be perceived mentally, as He is different from and devoid of pain and pleasure. God cannot also be inferred as no similar instance can be given in support of the inference. As to the Vedas, their evidence is useless, firstly, because they are not universally accepted; and secondly, because they themselves depend for their authority on God. Their evidence is not therefore reliable.

Annambhatta proves His existence on the simple principle of causality.

Every effect must have an agent. The universe is au effect.

∴ It must have an agent.

And this agent is called God.

The essential quality of an agent is that he must have a direct knowledge of the material cause, a will to act, and an effort. There can be no effort unless there is a will, and a will to produce can never arise without there being previously a direct knowledge of the material cause out of which the effect is to be worked.

The individual soul is defined as 'the substratum of pleasure, etc'., thereby excluding God who is above pleasure or pain.

But then a materialist would say that our body itself is the soul, because our consciousness such as 'I am a man', I am a Brahman', refers to the body. The author says no, not

so. The self remains the same though the body changes. On the other hand we ofen say, 'it is my body', 'it is my head'. Does not this prove that the possessor is different from the possessed ? Moreover we do not feel any dimunition of self even if an arm or leg be cut off. The soul therefore is different from the body. Nor is it any organ simply because we use expressions like, 'I am deaf,' I am blind,' etc., for the deprivation of any one or all the organs does no injury to the soul. And moreover if the organ be soul, there would be as many different souls in a body as there are different organs of sense. We shall not have then the unity of conscious agent as we have now, that the same person, viz. I, who saw the jar touch it now; and lastly mind is not the soul, as mind being atomic would be incapable of simultaneously apprehending many objects. The soul therefore is somethiag different from all these. He is different im different bodies experiencing pleasure, pain, etc. He is not atomic for were he so he can occupy only a minute spot in the body and cannot simultaneously feel pleasure or pain at different parts of the body. If the soul has an intermediate position he will be liable to destruction by the enlargement or diminution of that magnitude. The soul therefore is eternal and all-pervading.

XVIII. Mind is the organ which is the instrument of the cognition of pleasure, etc. It is innumerable, one being assigned to every individual soul. It is atomic and eternal.

Another suggested definition being, 'that which can act being (itself) intangible'. But if you say, mind is not atomic but all-pervading like ether, being intangible, you are not right. For if mind be all-pervading, there will be no contact of mind with the all-pervading soul, according to a well-known Nyaya doctrine that two all-pervading substances can never be mutually in contact.

Even if such a contact be admitted, as do the Mimansakas, it will be eternal and continuous, there will be no cessation

of knowledge and no sleep. The Nyaya accounts for sleep by supposing that it is induced when the atomic mind enters a particular vein in the body called **Pureetat.** It is an intestine near the heart, somewhat like a fleshy bag. "When the mind is there, there is the sleep, when it comes out being in contact with the soul it cognises external objects.

But granting the mind to be atomic, its contact with the soul, even when it is in **Pureetat** cannot be prevented ; for the soul being all-pervading must be present wherever the mind may be. Here again the Naiyayika is ready with his reply—an arbitrary assumption—that the contact of mind with soul ends at the mouth of the **Pureetat.** Another solution being that there is no airy cuticle—the organ of touch in the blessed **Pureetat,** and that contact of mind with it is a necessary condition for knowledge.

The fact is that the so-called Pureetat is nothing but the Sushutmna nadi of the yogins, opening at the top of the head whence the soul of a yogi goes to higher regions. The shrewd Naiyayikas have adopted only so much of this anatomy as suited their purpose. This theory is not supported by modern anatomy and physiology.

XIX. Colour is the special quality which is cognised* by eye alone. It is of seven kinds: white, blue, yellow, red, green, tawny and variegated; and resides in earth, water and light. Colour of all sorts resides in earth, pale white in water and bright white in light.

Words denoting colours are formed from words denoting the original coloured objects. White is 'pure'; blue, yellow red, green and tawny are formed after 'indigo,' 'brass,' 'blood,' 'a green precious stone' and 'a monkey' respectively. The last variety being a mixture, why not call it simply a

* It is needless to add that cognition here means our ordinary cognition and not the supernatural one of yogins who can apprehend anything by any organ of sense they please.

mixture of six colours than a new colour, to which the author says that, colour having a PERMEATING PROPERTY there cannot be several colours in one and the same object.

A PERMEATING PROPERTY is a property which never co-exists with its absolute negation in one and the same object. Thus when sugar is dissolved in water, it permeates the 'whole quantity of water and not only a part of it. The opposite of it is the 'NON-PERMEATING PROPERTY' which resides only in a portion of the object, and is therefore co-existent with its own absolute negation in another portion of the same object.' Thus, when a monkey sits on the top of a tree, it touches the top only and no other portion. The presence of the monkey at the top is co-existent with its absolute negation at the other branches. In simple words, a permeating property is one which pervades the object wholly and not only a part of it.

But what if there be no one colour, can we not perceive the piece of cloth by the colours of its parts ? No, you cannot says the author, for there is no colour to the piece of cloth as a whole, and without a colour you cannot perceive an object. The colours individually reside in parts only, while collectively they do not form one quality and therefore cannot show you the whole object.

It is a Nyaya doctrine that a collection is a thing by itself apart from its components. But then comes the question why a colour is at all a necessary antecedent for perceptibility; let the necessary antecedent be, not a colour, but the state of being intimately united with things having a colour. The objection to this view is that such a condition is unnecessarily elaborate and so we come to the same place whence we started that, 'variegated colour', is an independent colour.

Modern science makes colour a property of light.

XX. Savour is the quality apprehended by taste. It is of six kinds: sweet, sour, saline, pungent, astrin-

gent and bitter; residing in earth and water. Earth has all the six varieties, while water has only one, sweet.

The other varieties of savour which are sometimes apprehended in water are due to the dissolution of eatthy matter in it.

XXI. Odour is apprehended by the nose and is of two kinds, fragrant and non-fragrant, residing in earth only.

Mark the omission of the word 'alone,' in these two definitions, it being unnecessary.

XXII. Touch is the quality apprehended by the organ of touch only. It is of three kinds, hot, cold and temperate, residing in earth, water, light and air; cold touch resides in water, hot in light, and temperate in air and earth.

XXIII. The four qualities viz., colour, savour, odour and touch are produced by heat, and non-eternal in earth; elsewhere they are natural and both eternal and non-eternal; the eternal being confined to eternal atoms and the non-eternal to products which are non-eternal.

Paka is defined as 'the application of external heat which effects a change of colour and other qualities'.

According to the Vaisheshikas when a jar is baked, the old black jar is destroyed, its several compounds of atoms are also destroyed. The action of fire produces red colour in the atoms which are again brought together, and thus a new red jar is produced. This complicated process of dissolution and reconstruction is imperceptible on account of its extreme rapidity. The time allowed generally is nine moments. To this romantic theory the Naiyayikas object on the ground that

(i) if the first jar be destroyed and a new one substituted the old jar can never be identified.

(ii) We see the jar the same as before, except in colour through all the stages of baking and other pots placed over it do not tumble down as they must if their support be destroyed even for a single moment.

The Naiyayikas accept the simple theory of change of colour simultaneously in atoms and products. In this way the controversy between the **Peelupaka** (baking of atoms) and the **Peetherpaka** (baking of the pot) has been carried on for ages without ever coming to any decision.

XXIV. Number is the (special and instrumental) cause of the common usage of words, one, two, etc. It resides in nine substances and is reckoned from one to a parardha 100,000,000,000,000,000. Unity is both eternal and non-eternal; the eternal being confined to the eternal atoms and the non-eternal to products. Numbers from duality onwards are all non-eternal.

XXV. Dimension is the (special and instrumental) cause of the common usage of expressions' of measurement. It resides in all substances and is of four kinds: minuteness, largeness, length and shortness.

Each of these again may be of two kinds as middling and extreme. Thus, an atom has extreme minuteness technically called 'infinitesimality.'

XXVI. Severality is the (special and instrumental) cause of the common, usage of saying that this thing is different from that. It resides in all substances.

Severality is distinct from reciprocal negation; the former is positive, the latter negative.

XXXII. Conjunction is the (special and instrumental) cause of the common usage of saying that two things are united. It resides in all substances.

Conjunction is of two kinds, produced by action and produced by another conjunction. Contact of the hand with the book is of the first kind ; this contact produces another conjunction, viz., that of the body with the book, which is of the second kind.

XXVIII. Disjunction is the quality which destroys conjunction.

It has the same varieties and instances as conjunction.

XXIX. Priority and Posteriority are the (special and instrumental) causes of the common usage of words prior and posterior.

They reside in earth, water, light, air and mind. They are of two kinds, made by space and made by time. Distanced by space is posteriority, made near by space is priority, Distanced by time is posteriority, made near by time is priority. The first four substances are named because they are the only corporeal and non-eternal substances having limited dimensions. Mind being corporeal has only one kind of posteriority and priority—that caused by space, but not that by time, as it is eternal. The remaining four substances being both eternal and incorporeal cannot have any kind of priority or posteriority.

XXX. Gravity is the non-intimate cause of the first act of falling. It resides in earth and water.

This is rather inaccurate. The Naiyayikas do not seem to have known the modern dynamical theory of falling

bodies. Gravity, is the cause not only of the first act of falling, but of every subsequent act of falling.

XXXI. Fluidity is the non-intimate cause of the first act of flowing; residing in earth, water and light. It is of two kinds, natural and artificial. Natural fluidity, resides in water, artificial in earth and light; inearth (it is visible) at the application of heat to clarified butter; in light (it is visible) in gold, etc.

Unlike gravity, fluidity is assumed in light also, viz., in melted gold and other metals, white the gravity of metals is ascribed to the earthy portion in them.

XXXII. Viscidity is the (special and instrumental) cause of the agglutination of powders, and resides in water only.

The viscidity found in oil, milk and such other earthy things is due to the presence 'of watery portion in them. Water itself, says an opponent, extinguishes fire, how can then oil inflame fire if there be water in it ? The answer is, oil hastens the action of fire as it has a greater amount of viscidity than pure water. But then comes the next natural question, whence is this greater viscidity in oil, if it is due to water alone ? One commentator suggests the ridiculous explanation that it is due to the presence of liquid water, solid and gaseous water, such as ice and steam being incapable of containing aggluting particles.

XXXIII. Sound is the quality which is apprehended by the sense of hearing, and resides in ether alone. It is of two sorts, articulate and inarticulate; inarticulate sound as (is heard) from a drum; articulate as (is heard) in the form of a refined language, such as Sanscrit.

There is another three-fold division of sound, viz., (i) that produced by conjunction, such as the sound of drum

produced by contact of stick with the drum ; (ii) the sound chut chut while splitting a bamboo stick ; and (iii) that produced from sound, such as all subsequent sounds produced from the first one.

XXXIV. Cognition is the (special and instrumental) cause of the common utterance of words intended to communicate, and it is knowledge.

It is of two kinds, remembrance and apprehension; remembrance is knowledge born of an abiding impression alone; apprehension is all knowledge other than remembrance.

The 'alone,' in the definition of remembrance has been sharply criticised; it is intended, it is said, to exclude reminiscence. The difference between reminiscence and remembrance consists in the presence and absence of the thing recollected.

In remembrance the object remembered is not before our eyes, in reminiscence the object is actually before our eyes, and is remembered to have been seen before. Apprehension is any cognition newly acquired and no repetition of some former one.

XXXV. Apprehension is two-fold, right and wrong. It is a right apprehension in which an object is recognised as it really is. It is called Prama. It is a wrong apprehension in which an object is recognised as it is really not.

The cognition of silverness in a thing which is silver is **Prama**; while the same cognition of silverness if made in a mother-of-pearl is **Aprama.**

XXXVI. Right apprehension is divided into four kinds, Percept, Judgment, Analogy and Verbal, knowledge. The instruments of these are also four, namely, Perception, Inference, Comparison and Word.

An instrument of right apprehension is a proof.

XXXVII. A peculiar cause is an instrument.

'Peculiar' as opposed to ' general,' such as time, space, etc. Many causes contribute to produce an effect, but some of them are related to it, more closely than others. Of two murderers, one who strikes the blow has certainly a greater share in the murder than his companion who holds the victim. Some causes are most active and also most essential in producing an effect, while others simply aid it. The horse which draws a carriage is certainly more efficient than the wheels which only facilitate motion by lessening friction-

These are causes pre-eminently so called and are distinguished from other causes by the special term, **an instrument.**

XXXVIII. A cause is one that invariably precedes its effect.

That a cause must precede its effect is evident, for otherwise it will not be a cause. But all antecedent things are not necessarily causes. The potter's donkey used to bring earth from a long, long distance, precedes the jar, but is not the cause of the jar as earth can be brought in some other way and the donkey can be dispensed with. Hence the word 'invariably' is added to exclude all but the indispensable antecedents. But even this is not deemed sufficient. The potter's father, old Mr. Potter, invariably precedes the jar, for without him there could have been no potter and without the potter there could have been no jar.

Therefore, old Mr. Potter and all his ancestors beginning from Adam or monkey as you choose, are not causes of the jar, and hence another adjective or condition is added; the cause must not be too remotely connected with the effect. All this means nothing more than that as Mill says, a cause is an unconditional and invariable antecedent.

Of secondary antecedents, there are three varieties, borrowed by our author from Gangesha ; the first consists of things connected by intimate relation with the cause, and are therefore antecedent to it; second consists of things that are antecedent to the cause and are *a fortiori* antecedent to the effect; such as the Potter's father, who being antecedent to the potter is antecedent to the jar; third consists of all other concomitants of the cause that are not connected with it by intimate relation.

XXXIX. Effect is a thing that is the counter-entity of its anterior negation.

Anterior negation is the negation of a thing before it comes into existence; and so to say that effect has an anterior negation is equal to saying that it has a beginning and is not eternal. Both anterior negation and destruction are non-eternal; the first has an end but no beginning, the second has a beginning but no end. The first is not an effect, while the second is. Hence effect is defined as the counter-entity of its anterior negation.

But what is a counter-entity ? It is a relation between existence and non-existence, between a thing and nothing. It is a pure subjective relation existing between the notions of two external things. Though the things may be non-existent and immaterial, their notions are real enough to allow a relation between them. A negation is a non-entity, but the idea of a negation is positive and really exists in the mind. It must therefore have an external object to which it corresponds. Negation itself cannot be this object, because it has a positive existence; hence this object must be found among the six existing substances or entities. That entity therefore by which a particular notion of a non-entity is explained is called its counter-entity. There are various kinds of counter-entities, the one referred to here is a sort of opposition. Similarly the thing in relation to which this counter-entityship is spoken of is called the Anuyogi of the

relation. Absence of a jar, is the counter-entity of a jar, while the ground of which the absence is predicated is the Anuyogi of that absence.

XLI. Cause is divided into three kinds, intimate, non-intimate and instrumental.

An intimate cause is that in inseparable union with which the effect is produced: as threads of the piece of cloth, the piece of cloth of its own colour;

A non-intimate cause is one which not being intimate itself, is inseparably united either with the effect or with the (intimate) cause (of the effect); as the conjunction of the threads of the piece of cloth; the colour of the threads of the colour of the piece of cloth.

An instrumental cause is any cause besides these two, as the loom and the shuttle-cock of the diece of cloth.

All constituent parts of a substance and all substances are intimate causes of their products as well as resident qualities and actions respectively.

The non-intimate cause is an intermediate step-stone as it were between the intimate cause and the product. The third class of causes comprises everything else necessary for the production of the effect, but separable from it. Instrumental causes are of two kinds, 'universal' which are eight and 'special' which are innumerable.

The term 'non-intimate ' is rather misleading, as it does not properly denote a cause which is not connected by initimaterelation with the effect. In this sense an instrumental cause will also be a non-intimate cause, while one species of non-intimate proper will be excluded. A non-intimate cause simply means an inseparable cause which is not an intimate one ; it is not recognised by other systematists and is purely an invention of the Naiyayikas.

XLI. Of these three sorts of causes that which is peculiar is the instrument.

An instrument is that efficient cause which directly and immediately produces the effect by its own action.

XLII. perception is the instrument of percept. Knowledge produced by contact of organs with external objects is percept. It is of two kinds, indeterminate and determinate. Indeterminate is that which has no distinguishing characteristic, while determinate knowledge has.

In the cognition, here is a jar, the jar—the object of cognition is the **Visheshya,** while jarness—the distinguishing property of a jar—is the **Prakar** of the corresponding cognition. **Visheshya** describes the form of the cognition, **Prakar** distinguishes it from similar cognitions. Similarly there is a distinction between Visheshana and Prakar. Visheshana is the property of a material object, Prakar is the property of knowledge.

XLIII. Contact of the organs of sense with their appropriate objects, which is the cause of perception is of six kinds; conjunction, intimate union with the conjoined, intimate union with a thing which is intimately united with a substance that is in conjunction with the organ, intimate union, intimate union with a thing intimately united with the organ and contact for the perception of negation.

The organ of sight coming in contact with a jar sees it, and this is of the first kind. Contact of the eye with the colour of the jar is of the second kind, the colour being intimately united with the jar which is conjoined with the organ. The cause of knowledge of the abstract colour of the jar by the eye, comes under the third class: intiinate union with a thing, i.e., the colour, which is intimately

united with the jar that is in contact with the organ of sight. Contact of organ of hearing with its product the sound, comes under the fourth class. The apprehension of the genus sound is of the fifth class: intimate union with a thing intimately united with the organ. The last is the cause of the perception of negation; e.g., 'Here there is no jar on the ground,' where the ground qualified by the absence of the jar comes in contact with the eye.

Perception is knowledge produced by (either of) the six contacts. Its instrument is the organ of sense. It is proved therefore that organ of sense is the cause of perception.

The five contacts account for the perception of the first four categories. Particularity residing generally in atoms is imperceptible. The cases of intimate union and negation are specially provided for by the sixth contact. This last is of a peculiar kind, and is assumed to account for the perception of negation and intimate union according to those in whose opinion both are perceptible, and of negation only according to those who deny the perceptibility of intimate union.

XLIV. Inference is the instrument of judgment. Judgment is the knowledge that springs from consideration. Consideration is knowledge of the property of the subject qualified by its invariable concomitance, e. g., this mountain has smoke, the invariable concomitant of fire. The knowledge from it that, there is fire on the mountain, is inference. The rule of co-existence that wherever there is smoke there is fire, is the invariable concomitance. The property of the subject is the thing qualified now" residing in a mountain.

Vatsyayana defines inference as the process by which from the perceived we get at the knowledge of an associated unperceived. This is certainly the simplest definition.

An inference mainly consists of three constituents, the reason, the thing to be proved, and their mutual relation of invariable concomitance ; any two of which necessarily lead to the third. In the Aristotelian syllogism, the reason and the relation of invariable concomitance correspond to the first two premises, which being connected together by a common middle term lead to the conclusion.

Consideration is a combination of **Hetu** and **Vyapti** by joining them inseparably as subject and attribute.

An inference is the application of a general truth to a particular instance. This particular instance is called **Paksha** of which an inferrible property can be predicated. **Pakshata** is the characteristic which distinguishes the **Paksha** for the time being from other things of the same or of a different nature. Thus, any mountain is not Paksha but it becomes one, as soon as we observe smoke on it and desire to infer fire therefrom. **Paksha** is defined as 'possessing the non-ascertainment of a thing,' that is having on it a thing which is unascertained, but which is to be inferred; and **Pakshata** as the residence of **Hetu** on **Paksha.**

Vyapti is divided into two sorts. **Anwaya** or positive and **Vyatireka** or negative. The second is the converse of the first. Of the two parts of an inference, **Vyapti** and **Paksha-dhamta,** the first proves the invariable association of the thing to be proved with the **Hetu** in general, while the latter proves the same on PAKSHA. The essence of an inference consists in proving the existence of the thing to be proved on **Paksha** from that of **Hetu.**

XLV. Inference is of two kinds. Inference for one's self and inference for another. Inference for

one's self is the cause of judgment for one's self. Inference for another is the cause for the judgment of another.

For instance, after repeatedly seeing that there is fire where there is smoke, e. g., in a kitchen, and taking it (fire)as its (smoke's) invariable concomitant, one goes to a mountain and seeing smoke thereon as in a burning fire, recollects the proposition 'where there is smoke, there is fire.' Then comes the knowledge that the mountain has on it fire, the invariable, concomitant of smoke. This is called consideration from the mark. 'Therefore the mountain is on fire,' this knowledge is the judgment. This is inference for one's self.

But when one after inferring fire from smoke uses a five-membered syllogism for the apprehension of others, it is called inference for others. For instance,

This mountain is on fire,

Because of the smoke,

Whatever smokes has fire on (or in) it; e.g., a kitchen.

This is like that.

∴ This has that.

with this mark proved, even another person will infer fire.

Judgment for another is nothing but judgment for one's self imparted to another through the medium of language in a prescribed form.

XLVI. Assertion, Reason, Example, Application and Conclusion are the five members. This mountain is fiery, is an assertion. Because it smokes, is the reason.

whatever smokes is fiery, e.g., the kitchen, is the example. This mountain is a thing that smokes, is the application. Therefore it is fiery is the conclusion.

The assertion prepares the hearer beforehand as to what thing he should expect to be proved by the syllogism. After the assertion is made, one is naturally tempted to ask whence, why or on what evidence. The answer to this question is the reason which declares the mark or evidence which led the speaker to think so. After reason comes the question 'what connection can there be between fire and smoke which makes us infer one from the other?' The third member or example satisfies the question by showing the invariable concomitance of fire and smoke. "Well, but how is it relevant to the point before us?" To show this the invariable concomitance is incorporated with the assertion and reason, and the combination results in consideration, expressed by the fourth member, the application. The last, viz., conclusion brings together all these several elements into one proposition, and thus enables the hearer to comprehend the result at once.

Hetu and **Linga** though used indiscriminately, slightly differ in meaning; **Linga** is the mark such as smoke, while **Hetu** is the sentence which declares that mark.

The five-membered Sanskrit syllogism and the tripartite of Aristotle, differing only in outward form remarkably agree in their essence. Both give equally valid conclusions, but the Aristotelian premises are nothing more than the absolutely necessary constituent parts of an inference connected together by the slender tie of mere juxta-position; while the Sanskrit ones on the other hand constitute a fully reasoned out argument whose parts follow each other in their natural sequence. Aristotle's premises are as it were a simple enumeration of the several steps in a deductive reasoning; the Sanscrit constitute a regular constructed debate in miniature. Aristotle's syllogism only furnishes the skeleton and the reader or hearer fills up the interstices; in its Sanscrit coun-

terpart, the speaker himself goes through all the steps and the hearer has only to follow him. Thus, one is rather analytical or demonstrative, the other is expository and rhetori. cal. The Sanskrit is more useful in discovering the conclusion ; the European is better fitted to test its validity. Conversion.—Sanskrit-English. The easiest mode pf conversion is to omit the first two members, Assertion and Reason, altogether, and then take the remaining three in their order, viz., make Example the major premiss. Application the minor one and the last conclusion and you get a perfect syllogism in Barbara.

For instance, in the hackneyed example, 'this mountain is fiery', drop the assertion, reason and the second or useless part of the illustration and translate:

Whatever smokes is fiery. This is like that, viz., this mountain smokes.

∴ This is that, viz., this mountain is fiery.

Darii and Feroque are not possible in Sanscrit, as Nyaya does not recognise a particular conclusion. Celarent too is not allowed in Sanscrit. A negative proposition should always be made a positive one before giving it a Sanscrit garb, as there can be only one form in Sanscrit, the Barbara. The assertion must assert something. A Naiyayika will never say 'sound is not eternal,' but 'sound is non-eternal.'

XLVII. Consideration of the mark is the cause of judgment for one's self and of that for another. Consideration of the mark therefore is inference.

Annambhatta purposely uses the word 'consideration of the mark' instead of simple 'consideration' in order to emphasize his view that the real instrument of Judgment is the consideration of the mark and not mark , simply, and that the inference is properly applicable to the consideration of the mark alone.

XLVIII. Mark is of three sorts; positive and negative, merely positive and merely negative. The

first is in invariable concomitance with the thing to be proved both positively and negatively as smokiness is with fire. Wherever there is smoke there is fire, as in a kitchen. This is the positive invariable concomitance: Where there is no fire there is no smoke, as in a lake. This is the negative invariable concomitance A merely positive mark has the invariable concomitance affirmatively only; e.g., a jar is nameable for it is knowable. Here as the properties of nameability and knowability reside in all things, a negative concomitance of theirs, that is a concomitance of their absolute negations is impossible. A merely negative mark has the invariable concomitance negatively only ; e.g., Earth is distinct from all other substances, because it has odour. That which cannot be differentiated from others, has no odour, e.g., water. This is not like that Therefore this is not that. Here there is no positive instance like 'that which has odour is distinct from others'; because odour resides in earth alone.

Anvaya is the invariable concomitance of **Hetu** and **Sadhya**; **Vyaterika** which etymologically means 'absence' is a similar concomitance of their absolute negations. The essence of a **Kevalanwayi** consists in the **Sadhya** being coexistent with all existing things, while that of a **Yyatireki** is that the **Sadhya** is coterminous with **Paksha.**

XLIX. A Paksha, subject, is that on which the existence of the thing to be ascertained is doubtful, as the mountain in an inference of fire from smoke.

L. A similar instance is that on which the existence of the thing to be ascertained is already known, as a kitchen in the same inference.

LI. A contrary instance is that on which the negation of the thing to be ascertained is already known, as a deep lake in the same inference.

The definition of Paksha is however open to an objection. It is *prima facie* incorrect because it does not apply to cases where we infer a thing, even though it may have been previously ascertained by other proofs, such as Perception or Word. Even in ordinary life we often infer though the Sadhya is actually observed or otherwise ascertained. It is not necessary therefore that the **Paksha,** in an inference, must be 'doubtful'. The true definition of Paksha, says the Tarka-Dipika is, 'a thing which is the substratum of Pakshata', which in its turn is defined as 'the non-ascertainment of a thing plus the absence of any desire to infer'. This is more like an apology for forwarding an inaccurate definition. The difficulty may be removed by taking the word 'doubtful' in the sense of, not doubtful absolutely but doubtful for the time being.

LII. There are five sorts of fallacious reasons: A discrepant reason, A contrary reason, A counterbalanced reason, An Inconclusive reason and A Contradicted reason.

The fallacious reasons, the author of Didhiti remarks, are divided into five classes not because only five varieties of them are possible, but because the errors which underlie them are of so many kinds. This is the reason why Annambhatta enumerates only the five kinds of **Dushtahetus** without caring to define it

A **Hetudosha** is that which is the subject of a right knowledge which prevents a judgment.

LIII. A Discrepant reason is that which co-exists with the thing to be proved only partially. It is of three sorts, Overwide, Peculiar and Non-exclusive.

An overwide reason is that which co-exists with the thing to be proved and its negation; e.g., a mountain is fiery because it is knowable; knowability here exists also in things that have no fire as in a great lake.

A peculiar reason is absent from both the similar and contrary instances; e. g., sound is eternal because it has the nature of sound. The nature of sound exists neither in eternal nor in non-eternal thing.

A non-exclusive reason is that which has neither a similar nor contrary instance ; e. g., everything is transient because it is knowable; where 'everything' being the major term there can be no instance similar to or contrary to it.

Here the Vyapti is not correct. The reason co-exists partly with the thing to be proved and partly with its negation and entirely with neither. This has a tendency to prove Sadhya and its negation because it is co-existent with both.

(a) An overwide reason—It co-exists both with the Sadhya and its negation, and there is no reason why one should be inferred from it and not the other. But both cannot exist together and hence the Hetu is fallacious.

(b) A peculiar reason—The reason is absent in both the similar and the contrary instances; that it is absent in a contrary instance is of course natural, but the peculiarity is that it is absent in a similar instance also. So, if the overwide is present in both the instances, the peculiar is absent from both. One errs on the side of excess, other on that of defect.

(c) A non-exclusive reason:—Here the Paksha being universal nothing is excluded from it. It has neither a similar nor a contrary instance. Now this can happen only when all things in the world are included in Paksha and nothing is left beyond its range to be named as Sapaksha or Vipaksha.

The three varieties are thus nothing but the three possible ways in which the defectiveness of a discrepant reason may occur.

LIV. A contrary reason is that which is less extensive than the negation of the thing to be proved and is never co-existent with it; e.g., sound is eternal because it is artificial. The artificialness of sound is exactly the reason why sound should be non-eternal.

The fallacy here consists in drawing a conclusion just contrary to that which would be justified by reason. In a discrepant the Vyapti is imperfect, here it is actually contrary.

This accords well with **Gotama's** definition, 'A contrary reason is that which is contrary to the conclusion desired to be drawn'.

LV. A counter-balanced reason is that where the reason which proves the negation of the thing to be proved is different from that actually given; e. g., sound is eternal, because it is apprehended by the organ of hearing. The reason which proves that sound is non-eternal is different from the one given above.

In a contrary reason the reason is inconsistent with the thing to beproved in the same inference, in a counter-balancedreason, the reason given is inconsistent with the thing to be proved in a contrary inference.

LVI. The inconclusive reason is of three sorts, subject-without-a-character, non-existence and improper limitation.

A subject-without-a-character is thus : a skylotus is fragrant because it is a lotus. Here the subject, skylotus has no character as it has no existence.

A non-existence is thus: sound is a quality because it is visible. Here sound is not visible as it can be apprehended by the organ of hearing.

The reason improper limitation is true conditionally only. A condition is co-extensive with the thing to be proved, but less extensive than the reason. Co-extensiveness with the thing to be proved is the quality of never being the counter-entity of any absolute negation co-existing with the thing to be proved. The quality of never being the counter entity of any absolute negation co-existing with the instrument or reason is the less extensiveness than the reason.

For instance.

The mountain smokes,

Because of the fire on it.

The application of wet fuel is the condition here. Wherever there is smoke there is the application of wet fuel. This is the Co-existence with the thing to be proved. Where there is fire there is (necessarily) no application of wet fuel, as in a hot iron ball. Thus being Co-extensive with the thing to be proved, it is less extensive than the reason, for instance, the application of wet fuel. This is a condition the improper limitation being the conditional existence of fire.

Here the reason given to prove a thing, is itself unproved. It is little better than a woman's reason. The error may be either in Paksha, Hetu or Vyapti, and so there are three varieties of it. In the first the reasoning would be correct if the major term, sky lotus, had been a real thing ; in the second the reason itself is non-existent on the major term ; in the third what by excess or defect the reason is different from what it ought to be and its co-extensiveness with the thing to be proved is therefore questionable.

Vyabhichar and **Vyapyatwasidhiti** Contrasted. The first is positive, the second negative. The first is the cause which disturbs the invariable concomitance, the second is only the absence of that concomitance.

The first is the certainty that the invariable concomitance is false ; the second is the uncertainty that it is real. The first is therefore stronger and more palpable, while the second occurs more frequently in practice and is not easily detected.

But what is an upadhi? It is a thing, says Udayattacharya, which imparts its own property to another object placed in its vicinity, as a red flower which makes the crystal placed over it look like a ruby by imparting to it its own redness, not really but seemingly. The flower is therefore the Upadhi. It came to mean afterwards a condition or the surrounding circumstances which make a thing look as it appears to be.

There are four kinds of Upadhis; (a) that which covers the Sadhya absolutely or univerally. (b) that which covers it only in that form in which it exists on the Paksha; (c) that which covers it only when it is associated with Sadhahna; (d) that which exists in the Sadhya independently.

The application of wet fuel which co-exists with smoke everywhere is an instance of the first kind. That of the second one is 'Air is perceptible as it is the substratum of manifested touch.' Here the manifested touch is perceptible (visible) only when it is accompanied by manifested colour. But this manifest touch is no necessary condition for perceptibility of all kinds since it does not exist in mental perception. It is necessary only for that kind of perception which is possible in the case of external objects. An instance of the third kind is, ' This son of the woman Mitra is dark coloured, because he is a son of Mitra, like his elder brethren.' The dark complexion is found only in those sons of Mitra, who were born when their mother had eaten vegetables and not ghee. Other sons of Mitra born after eating ghee are not dark-coloured, while eating of vegetables is not known to produce dark colour anywhere except in Mitra's sons. The Upadhi here is the state of being produced from vegetables. Antecedent negation is non-eternal as it is inferrible, is an instance of the fourth kind.

LVII. A contradicted reason is a statement where the absurdity of the thing to be proved is ascertained by another (and of course a more authoritative proof). Fire is cold because it is a substance- Here coldness is the thing to be proved, but its absurdity is directly ascertained by actual perception, as the heat of fire is perceptible by touch.

It may be remarked here that there is much confusion as to the correct meaning of the term 'perception,' in the last two sections. The pristine purity of the original Sutras leaves very little room for doubt. But too many cooks spoil the broth and thus unfortunately a host of commentators have taken into their head to make the Text as unintelligible and terrific as possible. Frightfully long compounds, mere conventionalities and distinctions without a difference are the weapons, offensive and defensive in this battle of words. It may be doubted if either the writer or the reader is made a whit the wiser by all this labour.

LVIII. Comparison is the instrument of Analogy. Analogy is the knowledge of the relation existing between a name and the thing denoted by it. Its instrument is the knowledge of similarity. Recollection of the gist of some former directions is an accessory action. Take a concrete example.

A man who has never seen a gayal nor knows what it is like, learning from some forester that a gayal is like a cow, goes to a forest and there sees an animal resembling a cow. The perception of this similarity reminds him of the former directions (of the forester). Then combining this reminiscence with his actual perceptive knowledge of similarity, he concludes that the animal before him is a gayai.

The Vaisheshikas and Sankhyas do not admit comparison as a separate proof. They include it in inference.

Two things are necessary for comparison. First, a faith-

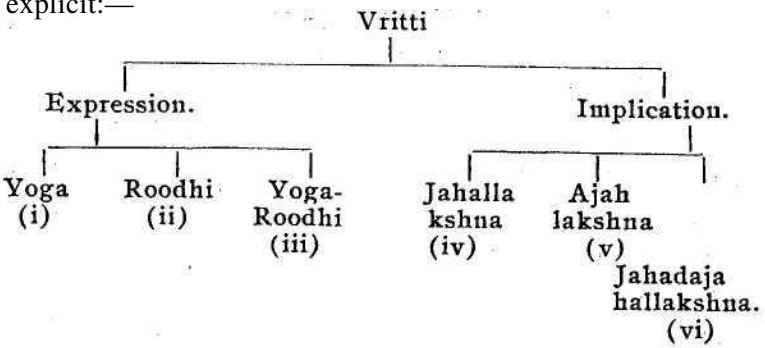
ful description of the object to be known from a person worthy to be believed; second, a perceptive knowledge of similarity. But which of these two is the real cause of Analogy?

The ancient and the modern school of Naiyayikas differ here. The former declare 'the formal direction', while the latter 'the knowledge of similarity', as the cause. Annambhatta accepts the modern view and expressly, says that 'knowledge of similarity is the cause of Analogy.'

LIX. Word is a proposition uttered by a credible person. A credible person is he who speaks the truth. A proposition is a collection of words such as, Bring a cow. A word is 'that which possesses the power of conveying meaning'. Power is the convention made by God that such and such a meaning should be understood from such and such a word.

Annambhatta in the commentary gives another and a better definition of power. Power, he says, is the relation of a word and an object, that always serves to revive the memory of that object (whenever the word is spoken). The power of a word resides in both the Jati and the Vyakti, but in different ways; it is active in the former and positive in the latter.

But power does not exhaust the whole import of words. Every word is capable of conveying two meanings, primary and secondary. The relation by which a word signifies a particular thing is called Vritti and is of two kinds, expression and implication. The first is inseparable from the Word; the second acts in the absence of the first and is entirely different from it. The following will be more explicit:—



(i) Yoga or etymology is the power of the several roots of the word ; e.g., Pachaka, a cook, from pacha to cook.

(ii) Roodhi, customary significance, e.g., Ghata, though from ghata to make, does not mean a thing made, but 'a jar.'

(iii) Yoga-roodhi, half etymology and half customary, e.g., Pankaja, lit born in (or from) mud. It may mean even a frog, but custom has narrowed the meaning to 'a lotus'.

(iv) Lakshna is 'connection with the expressive sense of the word'; and Jahallkshna is that where the primary sense is wholly abandoned and a new one substituted; e.g., Cots cry, here cots stands for the children sleeping on cots.

(v) Here the word retains its primary sense and conveys something more. Preserve curds from crows. 'Crows' here itands for all birds in general.

(vi) Here only a part of the primary meaning is retained and a part left out as being inapplicable. This is the Devadutta. Devadutta does not mean here the same man whom you saw some years before but the former Devadutta with the necessary changes of time, space, etc., as age and other circumstances.

LX. The three requisites of a proposition are, Expectancy, Compatibility and Juxta-position Expectancy is the inability of a word to convey the whole meaning of the sentence, caused by the absence of some other word. Compatibility is the non-contradiction of sense and Juxta-position is the utterance of consecutive words one after the other without any long interval between any two of them.

If a person says simply 'a jar', a desire is at once produced in our mind to know what about the jar, and is satisfied only when some more information is supplied. This desire to know is called Expectancy. ' He burns with water', would be meaningless because the notions of water and burning are inconsistent and incompatible with each other.

The third requisite is Juxta-position without which long breaks would occur in a sentence, the previous impressions vanishing before the sentence is finished and thus the sense would remain incomplete.

LXI. Without expectancy a proposition is invalid. For instance, a cow, a horse, a man, an elephant; these are meaningless without expectancy. One should sprinkle fire is inconsistent because of the absence of compatibility. 'Bring a cow', these words uttered each after a lapse of two hours are meaningless for want of Juxta-position.

Viswanath adds a fourth requisite, knowledge of the intention of the speaker. 'Saindhavam anaya' may mean either bring salt or bring a horse. Here all the three conditions are satisfied and still the meaning is not clear without knowing the intention of the speaker. This fourth requisite is required of necessity to clearly understand the speaker. But it sometimes happens that words which convey a sense are not necessarily uttered with an intention to convey that sense. A fool or an idiot sometimes utters words which he does not understand but which are intelligible to others; a parrot pronounces words which have a meaning in ordinary language and yet there is no intention in such a case. It may be urged that these are no words, but what if a Vedic text is repeated by a Brahmin who understands nothing of it.

LXII. A sentence is of two sorts, sacred and profane. A sacred sentence being pronounced by God is entirely trustworthy. A profane sentence is trustworthy if pronounced by a credible person. Any other is not.

This section is expressly inserted to assert that the rules laid down in the preceding three ones apply to the profane sentence only. The unquestioned authority of the Holy Word is not affected thereby.

LXIII. Knowledge of the meaning conveyed by the whole sentence, is the Verbal knowledge and the instrument thereof is trustworthy information.

The Vaisheshikas recognise only two proofs, Perception and Inference, including Word in the latter.

These four do not exhaust the whole number of proofs. Their total number recognised by one or more schools is ten and they are

(i) Perception,

(ii) Inference,

(iii) Comparison, (iv) Word, (v) Presumption, (vi) Non-erception, (vii Inclusion, (viii) Tradition, (ix) Sign and (x) Elimination.

The Charwakas or Atheist accept only Perception. The Vaisheshikas, the Buddhists and the Jains accept two, Perception and Inference. The Sankhyas, Yogins and lawyers accept three, these two and Word. The Naiyayikas add one more, Comparison. The Mimansakas add two more, Presumption and Non-perception.

The mythologists add two more, Inclusion or Probation and Tradition. The ninth, Sign, is recognised by occultists and different brotherhoods of saints or sinners. Elimination the last, though properly a species of Inference has been recognised by the Mimansakas as a distinct proof.

It will be seen that except Presumption and Sign, all these proofs come under this or that of the Naiyayikas. The signs and passwords are really speaking a combination of Perception, Inference and Word. As for Presumption the Naiyayikas strenuously include it in Inference and the Mimansakas as strenuously maintain it as an independent proof. The example cited is, Devadutta cannot remain fat unless he eats, and so if he does not eat during day time, he must be

eating at night. Night eating is thus presumed on the ground that one cannot remain fat—unless attacked by some disease which produces fatness—without eating.

LXIV. Wrong knowledge is of three sorts, Doubt, Error and Argument by Reductio ad- absurdum. Doubt is the knowledge of various contrary properties in one and the same object. Is this a post or a man? Error is any false notion. This is silver. The fact being that it is only a mother-of-pearl. A reductio ad absurdum is the imposition of a more extensive thing through the assumption of the less. If there had been no fire there would have been no smoke also.

It has been well said that truth is one, but falsehood is various. Hence the definition of wrong knowledge contains no restrictions as to certainty. Ancient Naiyayikas mentioned eleven kinds of Tarkas, of which the moderns accept five only, Ignoratio Elenchi, Dilemma, Circle, Regressus ad infinitum and Reductio ad absurdum.

LXV. Remembrance also is of two sorts, Right and Wrong. Right springs from right apprehension and wrong from a wrong one.

There is only one defect in this definition. Suppose the original apprehension was a right one, but the impression left by it is distorted or partially effaced owing to some accidental cause or a long lapse of time. Is not the remembrance wrong though the apprehension was as good as anything?

LXVI. Pleasure is that which is experienced by all with agreeable feelings.

LXVII. Pain is that which is experienced by all with disagreeable feelings.

LXVIII. Desire is wishing.

LXIX. Aversion is irritation.

LXX. Effort is volition.

LXXI. Merit that which is produced from acts enjoined by Sruti.

LXXII. Demerit is that which is produced from acts prohibited by Sruti.

LXXIII. The eight beginning from understanding are the peculiar qualities of soul only.

LXXIV. Understanding, Desire and Effort are each twofold, eternal and non-eternal. The eternal belongs to God, the non-eternal to man.

These sections are rather roughly treated. They add nothing to the knowledge of the student. They have been summarily dealt with probably because though of the utmost importance in Vedantic philosophy, they do not belong to the region of logic proper. Just so. But do the eternity of sound, the variegated colour or the meaning of the potential mood in Vedic injunctions, on some of which the commentators have exhausted their dilectical ingenuity belong to logic proper ?

LXXV. Of faculty there are three varieties, Velocity, Mental Impression and Elasticity. Velocity resides in earth, water, light, air and mind. Mental impression is born of experience and is the cause of remembrance, residing in soul alone. Elasticity is that force which brings a thing back to its normal condition whenever it is distorted. It resides in earth alone, e.g., in a mat.

LXXVI. Motion consists of movement. Movement in the upper space is motion upwards. Movement below is motion downwards, occupying less space is Contraction and greater space Expansion. Any other motion is (simply) Going, motion resides in earth, water, light, air and mind only.

LXXVII. Generality is one, eternal and resides in many. It resides in Substance, Quality and Motion. It is of two sorts, higher and lower. Higher is Existence and lower, for instance, Substantiality.

LXXVIII. Particularities reside in eternal substances and serve the purpose of distinguishing them from each other.

A more accurate definition of particularity is 'that which distinguishes self from self'. This doctrine of particularity is a peculiar tenet of the Vaisheshikas and one from which they derive their name.

LXXI. An intimate union is a permanent connection existing between two things that always remain inseparable. The expression 'inseparable' refers to things one of which is always dependent on the other. For instance, the product and its parts, quality and the qualified, motion and the moving, individual and the common characteristic, and lastly particularity and the eternal substances in which it resides.

The doctrine of intimate union is very important and may in one sense be said to be the corner stone of Nyaya philosophy. Sankhyas, Vedantins and Bhatta Mimansakas do not admit it.

It is open to grave objections. Sankaracharya strongly attacked it on its weakest point, viz., the inconsistency of calling Samavaya a connection between two distinct things and at the same time regarding it as of a totally different kind from Samyoga.

LXXX. Anterior negation is without any beginning but has an end. It represents the time before production. Consequent negation has a beginning but no end. It represents the time after destruction.

Absolute negation is eternal and has a counterpart determined by some connection with another thing. For instance, there is no jar on the ground. Reciprocal negation has a counterpart that is determined by the relation of identity of two things, as a jar is no piece of cloth.

The first two form one group of transient negations, the other two a second one of permanent ones. The first has an end but no beginning, the second has a beginning but no end. The last two have neither beginning nor end. Thus, the first, a Karya, and the second may be said to represent each the three divisions of time past, present and future, of which the past has no beginning and the future no end as time is eternal. Between these two eternities lies the Karya, limited both ways, viz., by creation at one end and destruction at the other.

This peculiar conception of negation discloses the habit of the Naiyayikas to invent any number of fictitious conventionalities, if they are convenient for practical purposes. Really speaking to class negation as a category is an absurdity. There is not the least resemblance between the two groups as one is the direct opposite of the other. Besides negation can be a category in the most literal sense of the word, but beyond that it cannot be said to have any external existence. It is non-existence pure and simple and all varieties of it, such as the non-existence of this thing and that thing are mere conventionalities of speech. It seems that the Vaisheshikas had not originally conceived of Negation Category. Even Kanada enumerates only six, omitting it altogether. But the ingenuity of commentators has added it later on, as being intended though not expressed by the Sutrakar.

Vedantins and Mimansakas do not recognise it as a separate category.

LXXXI. All things (under the sun) falling under

one or the other categories mentioned above, it is proved that there are seven and seven categories only.

Salvation iscessation of all pain; now this can only be effected by recognising self as distinct from body and all other material things. Ignorance lies at the root of all our miseries. It is the true aim of every science, therefore, to dispel it by imparting right knowledge. Right knowledge is the knowledge of the seven categories, for then one can distinguish self from not-self and free himself from mundane miseries. First therefore know thyself. This is exactly what the author of Swetaswetaropanishad meant when he said 'knowing that and that only, one goes to where there is no Death, no other path is known to go'.

To introduce beginners to the doctrines of Kanada and Nyaya, this primer of logic was composed by Annambhatta, the learned.